



BRIEFING NOTE TO THE DEPUTY MINISTER

THE CLIMATE RESILIENT BUILDINGS AND CORE PUBLIC INFRASTRUCTURE PROJECT

(For Information)

ISSUE

- The purpose of this note is to provide you with more information on the Climate-Resilient Buildings and Core Public Infrastructure Project (the Project) being delivered by the National Research Council and Infrastructure Canada.

KEY CONSIDERATIONS

- Although Canada's construction codes are seen as generally strong internationally, the development of building and infrastructure codes and guidelines in this country is a somewhat ponderous process, as national building codes are updated on a consensus-basis on five year cycles (given that code regulation is a provincial responsibility), with amendments taking up to a decade in some cases. More problematically, the code development process has also been very slow to address the very significant challenges posed by climate change for Canada's buildings and core public infrastructure.
- The incorporation of climate change considerations in the codes and guidelines process through this Project marks a major transformation in Canada building codes and guidelines, and is on its way to becoming a very important tool in preparing building and infrastructure construction for the worst impacts of escalating change and extreme weather events. It is also pushing Canadian engineers and designers as well as materials manufacturers and technology firms to innovate products and services to respond to the challenge.
 - The Project will see the first substantive introduction of evidence-based climate change considerations in building and core public infrastructure codes in Canada, with updated national code modules ready for adoption by provinces and territories in 2020, and formal national approval in the 2025 national building code cycle. Associated guides, specifications and evaluations will also be ready for use by industry, provinces, territories and municipalities in the near to medium term. (See Annex A for a partial list of Project outputs and deliverables with associated timeframes).
 - The Project will help advance the state of knowledge in the domain of climate change and its impact on Canada's core public infrastructure and will enable the development of science-based guidance to mitigate climate change risks and reduce the costs of future maintenance, service disruption and premature infrastructure failure. This work will provide all levels of government as well as the private sector with needed guidance for construction, and additional metrics for assessing the impact of new investments and forecasting likely rehabilitation and replacement pressures.
 - The formal publication of new guidance in the national code should not be seen as the starting point for influencing construction design and materials. National codes and guidelines are developed through a broad range of consultation with provincial and

territorial governments, municipalities, the construction industry, manufacturers and other industry representatives, and a wide swath of federal departments. Industry knows what is coming well before final publication – guidance/standards committees have between one-third and one-half industry participation, and industry and public consultations are extensive – so industry is well aware of the direction that government codes and regulations are likely to take well in advance of finalization. Thus, the development process for new standards helps to drive innovation in technology and materials as companies want to be well placed to meet coming market demand.

- Building codes and guidance are now also developed to be objective-based rather than strictly prescriptive, as was the case for many years. So, for example, if a code for wall construction is designed with the objective of having the wall withstand fire for a certain period of time, this will be stated rather than only prescribing the size and spacing of wall studs – encouraging builders, manufacturers and engineers to look at alternative potential solutions to the problem rather than relying only on approaches prescribed in codes. This means that even once codes and guidance are published, they are increasingly framed in ways that will encourage further innovation.
- The construction sector in Canada is a \$171 billion industry that employs 1.24 million people. It consumes 40% of the country's energy and 50% of its primary resources. To remain vital in the face of coming climate change challenges, the construction industry will need better, safer, energy-efficient and affordable construction materials and technology that can maintain or improve lifespan expectations for buildings and core public infrastructure. The work of this Project will be critical in that regard.
- Notwithstanding the extensive consultation and engagement efforts underway to encourage industry awareness of the design and materials challenges posed by climate change and prepare the market to respond to new codes and guidance, this department could work with the National Research Council and other partners to identify additional opportunities to amplify and accelerate the benefits of the research and development underway by the Project.
 - Consideration could be given, for example, to engaging with federal, provincial and municipal infrastructure asset managers on applying the lessons to forward investment plans and asset management practices; working with the clean technology hub and other government departments to look for opportunities to encourage further research and development to applied challenges identified by the Project; or incorporating resources and tools developed by the project into the Climate Lens guidance to help encourage their consideration in major project design and planning.

KEY BACKGROUND

- Canada's buildings and core public infrastructure – including roads, bridges, water and wastewater systems, transit and affordable housing – are increasingly facing the challenge of climate change, particularly extreme weather, which most were not constructed to accommodate. The annual average surface air temperature over Canada's landmass has warmed by 1.5°C between 1959 and 2010, approximately twice the global average. The total annual precipitation has increased, as has the frequency and severity of extreme events, such as heat waves, extreme winds, flooding and droughts. **Annex B** provides a non-exhaustive list of projected impacts on infrastructure by climate change.

- Canada's buildings and core public infrastructure are at serious risk due to inadequate action to date on incorporating climate change considerations in building and infrastructure codes and guidance. The current approaches to the design and rehabilitation of infrastructure are based on past (static) climatic assumptions, which may lead to early failure of the current stock of many assets, long service disruptions, and higher rehabilitation and replacement costs going forward. Moreover significant infrastructure failures created by climate change have significant potential negative economic implications for Canada (a potential loss of \$300 billion in GDP for Canada over the next decade by one estimate on a business-as-usual baseline; the Intact Centre has found that payouts from extreme weather have doubled every five to 10 years since the 1980s; the TD Bank group has estimated that extreme weather events will cost Canadians \$5 billion in payouts annually by 2020, rising to \$43 billion a year by 2050) and pose significant potential risks to the health and safety of Canadians. Recognizing this challenge, the Office of the Auditor General (Commissioner of the Environment and Sustainable Development) issued reports in 2016 and 2017 calling for action to update Canada's building codes through the incorporation of climate change calculations.
- In March 2016, the Prime Minister announced the launch of the project by Infrastructure Canada and the National Research Council. Infrastructure Canada is providing \$42.5 million to the National Research Council to integrate climate resilience into building and infrastructure design, guides and codes to inform future new construction and rehabilitation projects.
 - The Project is consistent with the Minister's mandate letter commitment to improve asset management and advance a 10-year plan that would include infrastructure investments to protect against changing weather. Developing climate-resilient codes and standards is also one of two key actions under the "Building climate resilience through infrastructure" commitment of the Pan-Canadian Framework on Clean Growth and Climate Change, along with government funding of infrastructure projects to strengthen resilience.

NEXT STEPS

- To look at further opportunities to use the Project to promote innovation in materials and technology and to accelerate the benefits of the research work underway, Policy and Results will work with the National Research Council and other partners to identify options and return to you later this spring.
- Upcoming fora where this issue will be discussed include the monthly project oversight meetings with the National Research Council and the fifth meeting of the Federal Government Departments Advisory Committee that supports the project.
- The National Research Council will submit the second annual progress report for the Project to this department in July 2018, together with a more comprehensive list of project outputs and deliverables with associated timelines for completion.

[REDACTED]

David Murchison
Assistant Deputy Minister
Policy and Results.

March 28/18
Date

Attachments:

- Annex A – Climate Resilient Buildings and Core Public Infrastructure Project: Outputs and Deliverables**
- Annex B – Examples of Projected Infrastructure Vulnerabilities to Climate Change**

Climate Resilient Buildings and Core Public Infrastructure Project: Outputs and Deliverables

This document provides a partial list of the preliminary outputs and major deliverables for the Climate Resilient Buildings and Core Public Infrastructure Project. A more exhaustive list will be provided by the National Research Council to Infrastructure Canada in the July 2018 project status report.

Buildings

- A **future-looking climatic design data set**, based on the best available climate change science, is being developed for use in the 2025 model National Building Code.
- A full **update of historic climatic design data** for the National Building Code is also underway, including improved accounting for extreme wind and snow events, and is expected to be included in the 2020 National Building Code.
- **New structural design provisions for buildings**, using innovative methods that take into account the changing climate and aiming to achieve more consistent resilience across the country, are being prepared for potential adoption by the 2025 National Building Code (to this end, the Standing Committee on Structural Design has been engaged in the process, and early feedback is positive).
- The CSA **Guideline on Durability of Buildings** (S478) is in the process of being updated and converted to a Standard, enabling the enforcement of durability of buildings for the first time in Canada (the current goal is to have the standard referenced in the Appendix of the 2020 National Building Code, with the potential inclusion of provisions in the main body of the Code for 2025).
- **Updates to the National Master Specification (NMS)** to incorporate climate resilience are underway, including the development of new sections on commissioning. This is the first specification set in North America to undertake this initiative. The NMS is used by the federal government, other public organizations and the private sector in the preparation of construction and renovation contract documents.
- The North American roofing industry is engaged and working with National Research Council to develop **Guidelines for Commissioning and Certifying the Resiliency of Roofs Subjected to Extreme Weather Events** by 2020, with plans to use this as a seed document for standardization through Underwriters Laboratories of Canada (ULC).
- The development of a **National Wildland Fire Urban Interface Guideline** is underway and being written in code-ready language, to enable adoption and enforcement by provinces and municipalities in 2020 (supporting research on material and system resistance to spread of wildfire, and forensics is also underway).
- The National Research Council is working with Health Canada and municipalities to develop tools to identify buildings and populations at risk of overheating during heat waves, and to provide **guidance for adaptation measures to reduce the effects of overheating** by 2021.

- Development of a **Technical Guide on Adaptable Housing in Remote Areas** is underway for 2021 and will address both current conventional remote and northern housing designs, as well as house designs specific to Indigenous that address their needs and customs.

Flooding

- Proposed codes provisions for flooding and new **National Guidelines for Flood Resilience of Buildings** are expected for 2021.
- A new **CSA Standard on basement flood protection** has been prepared, and was posted for public review for finalization by December 2019.
- The development of a **Guideline for flood-resilience of existing communities** by December 2018 is underway, a joint effort with the Standards Council of Canada and the Intact Centre.
- The University of Waterloo has developed the design of their first buoyant foundation prototype to be built in spring 2018 and a second prototype is being planned for retrofits on an existing house in a flood-prone community. Based on this effort, **Guidelines for buoyant foundations** will be developed by May 2020.

Bridges

- **CSA's Canadian Highway and Bridge Design Code** for 2019 will include a focus on durability, sustainability and resilience, clear definitions of design life and service life, and limited provisions for bridge sustainability, resilience and adaptation to climate change and extreme weather events. Complete provisions are being prepared for the 2024 Code.
- World-leading research into the **design of bridge cables to minimize the consequences of ice accumulation and shedding** is being conducted in the aerospace wind tunnels at NRC. Results will be available in June 2018, and are expected to impact international standards for cable-stayed bridge design.
- Research on the durability of existing bridge structures and materials is underway, and will advise the development of a **Guideline for Ensuring the Durability of Existing Bridges in a Changing Climate**.

Water/Wastewater

- A new **CSA Standard on Construction of Bioretention Systems**, and a new **CSA Standard on Climate Change Adaptation for Wastewater Treatment Plants** have been prepared, and are posted for public review. The final standards are expected for December 2019.
- **Guidelines for the climate resilience of existing stormwater systems** will be developed for 2021.

Roads

- **Guidelines for the adaptation of existing roads to climate change** will be developed for 2021.

- Work is underway through field trials to optimize concrete mixes for **pervious concrete pavement**, assess durability and hydraulic performance (potential for flood mitigation), and long-term performance and maintenance with results to be ready in 2021.

Transit

- **Guidelines on the design of tracks**, and on monitoring for freeze-thaw and overheating events are being developed for 2021.

Standards

- **Three new CSA standards** (basement flood protection, bioretention systems and wastewater treatment plans) have been drafted and are currently posted for public review. Completion is expected for March 2019.
- An **update to the CSA standards on Fenestration and Durability of Buildings** is expected by March 2019.
- With nationwide consultations now complete, the incorporation of climate resilience in **updates to the Canadian Electrical Code** will be made by March 2019.
- A review of ULC standards was conducted in 2017, and led to the identification of critical standards for update. Development of **updates to six suites of ULC standards** for 2019 is underway, including standards for fuel storage tanks, fire tests, air barriers, exterior insulation and finish systems and backwater valves.
- A **review of all CSA standards referenced in the building code**, to identify opportunities for increasing climate resilience, will be complete by April 2018. The results will be shared with SCC, and used to advise future priorities for funding of updates.

Examples of Projected Infrastructure Vulnerabilities to Climate Change

(Source: Infrastructure and Buildings Working Group,
Adaptation State of Play Report, March 2017)

Projected Changes	Potential Infrastructure Impacts
Temperature <ul style="list-style-type: none"> • Increase in annual and seasonal air temperature • Increase in number of hot days and heat waves • Decrease in number of extreme cold days • Reduced diurnal temperature range over most land areas • Loss of permafrost • Increase in evapotranspiration • Increase frequency of freeze-thaw cycles • Increased humidity • Increased frequency of drought conditions 	<ul style="list-style-type: none"> • Seasonal shifts in energy demand • Planning problems due to less reliable forecasting • Permanent submergence of some coastal areas/decrease in riparian property • Saltwater intrusion into aquifers • Decrease in water quality, potential increase in toxic algae blooms • Increased coastal erosion with increased exposure to winter storms due to reduced ice cover protection to winter storms • Potential increase in disruption to/failure of electrical systems, communications towers • Soil instability, ground movement and slope instability affecting infrastructure • Triggered instability of embankments and pavement structures • Increased frequency, duration and severity of: thermal cracking, rutting, frost heave and thaw weakening • Pavement softening/reduction in the maximum loads that can be safely transported • Rail buckling (speed reductions, spillage, derailment, scheduling delays, sensor malfunction) • Change in timing/duration of seasonal load restrictions and winter weight premiums • Increased challenges in pavement construction process • Shortened life expectancy of highways, roads and rail • Drier conditions affecting the life cycle of bridges and culverts • Increased flow of streams and rivers • Augmentation of Urban Heat Island Effect • Increased reliance on cooling system and thus cost for space cooling • Increased heat related health and safety risks to exposed workers • Location/density of communications masts may become sub-optimal as wireless transmission is dependent on temperature (refractive index) • Impacts on radio-frequency propagation quality if vegetation type changes • Reduce costs of space heating in buildings and thus reduced energy cost for space heating • Reduced snowfall impacts on masts, antennae, etc. requiring less maintenance • Less frequent requirements to cope with snow-melt water surge (flood) problems

Projected Changes	Potential Infrastructure Impacts
	<ul style="list-style-type: none"> • Changes in corrosion rates related to humidity • Changes in requirements for de-humidification to maintain internal environments within tolerance ranges of devices • Increased risk of subsidence, reduced stability of foundations, and tower structures • Traffic signal malfunction
Wind <ul style="list-style-type: none"> • Possible increase in speeds, changing patterns, shifting storm tracks 	<ul style="list-style-type: none"> • Increasing damages to built infrastructure from wind storms • More intense winter storms could result in a more dynamic shoreline zone and sand movement • Increased soil erosion affecting infrastructure • Closures/obstruction due to debris
Precipitation <ul style="list-style-type: none"> • Increase in annual average precipitation • Increase/decrease in seasonal average precipitation • Increase in frequency and severity of drought • More precipitation falling as rain/freezing rain rather than snow • Potential increase in ice storms / freezing rain events • Increased risk of flooding where precipitation increasing • Increase in forest fire hazard where precipitation decreasing 	<ul style="list-style-type: none"> • Increase in sanitary sewer direct discharges (CSO's) • Potential increase in disruption to/failure of electrical systems • Increase in waterborne disease outbreaks • Water availability/low water concerns during more frequent and severe periods of drought • Increase in erosion potential and sediment transport • Less water available for agriculture, hydropower production, recreation • Increased soil erosion • Impacts to municipal water intakes and discharge pipes (lowering lake levels) • Negative impacts to inland / ocean shipping/navigation/coastal infrastructure • Shoreline retreat, increase in riparian property boundaries • Capacity of culverts and storm sewer systems are more frequently exceeded; road damage, bridge washouts, underpass and basement flooding, increased repair bills and insurance costs • Causeways, bridges and low-lying roads have a high risk of being inundated or damaged • Reduced building components structural integrity through mechanical, • chemical and biological degradation / Accelerated deterioration of building facades • Premature weathering of input materials • Increased fractures and spalling in building foundations • Decreased durability of materials • Increased efflorescence and surface leaching concerns • Increased mold growth • Slope stability and integrity of engineered berms are also vulnerable to extreme precipitation

Projected Changes	Potential Infrastructure Impacts
	<ul style="list-style-type: none"> • Wharves and other coastal infrastructure to be rebuilt, moved or raised to avoid inundation • Existing moorings will require re-construction • Increased risk of basement and localized flooding / failure of urban stormwater infrastructure, high rates of rainfall derived inflow/infiltration resulting in sewer backup events • Increased corrosion in metals or deterioration in concrete • Summer taste/odour problems in municipal water supply • Capacity of stormwater infrastructure more frequently exceeded • Increased capacity of wastewater treatment facilities required • Urban drainage systems could fail, causing problems such as sewer backups and basement flooding • Communications towers can experience structural damages under heavy ice accretion loads or ice-fall damage from ice shedding (ice falling from the structure with melting temperatures), and in the most sever ice storms, collapse • Drier conditions affecting the life cycle of bridges and culverts. • Road blockage/disruptions • Bridge scour/closures • Flooding of roads, bus storage depots, etc.
Extreme Weather	<ul style="list-style-type: none"> • Increased frequency and/or severity of heavy precipitation events • Drought • Hurricanes / Tropical Storms • Hail • Wildland fire • Increase in coastal storm surge / risk of flooding • Increased damage to existing infrastructure and property / catastrophic failure • Increasing number of lightning strikes • Reduction of design safety margins • Reduced service life and functionality of components and systems • Increased repair, maintenance, reserve fund contingencies and energy costs • Increased water demands and pressure on infrastructure / water apportioning issues • Loss of potable water and increased water quality problems • Increased force exerted on docks • Land-based installations, such as oil storage reservoirs or storage facilities may need protection with seawalls to avoid damage • Increased risk of flooding of low-lying infrastructure and underground facilities • Increased erosion and flood damage to transport structures which may expose other infrastructure • Reduced quality of wireless communication services with higher rainfall rates



BRIEFING NOTE TO THE DEPUTY MINISTER

KEY ISSUES FOR PROVINCES AND TERRITORIES WITH RESPECT TO THE CLIMATE LENS AND THE COMMUNITY EMPLOYMENT BENEFITS INITIATIVE

(For Information)

ISSUE

- The purpose of this note is to outline the key issues raised by provinces and territories (PTs) with respect to the Climate Lens and the Community Employment Benefits (CEB) initiatives and to identify potential solutions for addressing those concerns in order to conclude negotiations of Integrated Bilateral Agreements.

OVERVIEW

Climate Lens

- As you are aware, an evergreen Climate Lens guidance document has been developed in close collaboration with Environment and Climate Change Canada (ECCC). Following prior consultations on the parameters for the Lens through the fall, the guidance document was recently circulated to PTs and industry representatives to solicit their views. Consultations with industry suggest that they are familiar with the proposed methodologies and are largely quite comfortable with the guidance as drafted. PTs have raised some concerns, however.

Community Employment Benefits

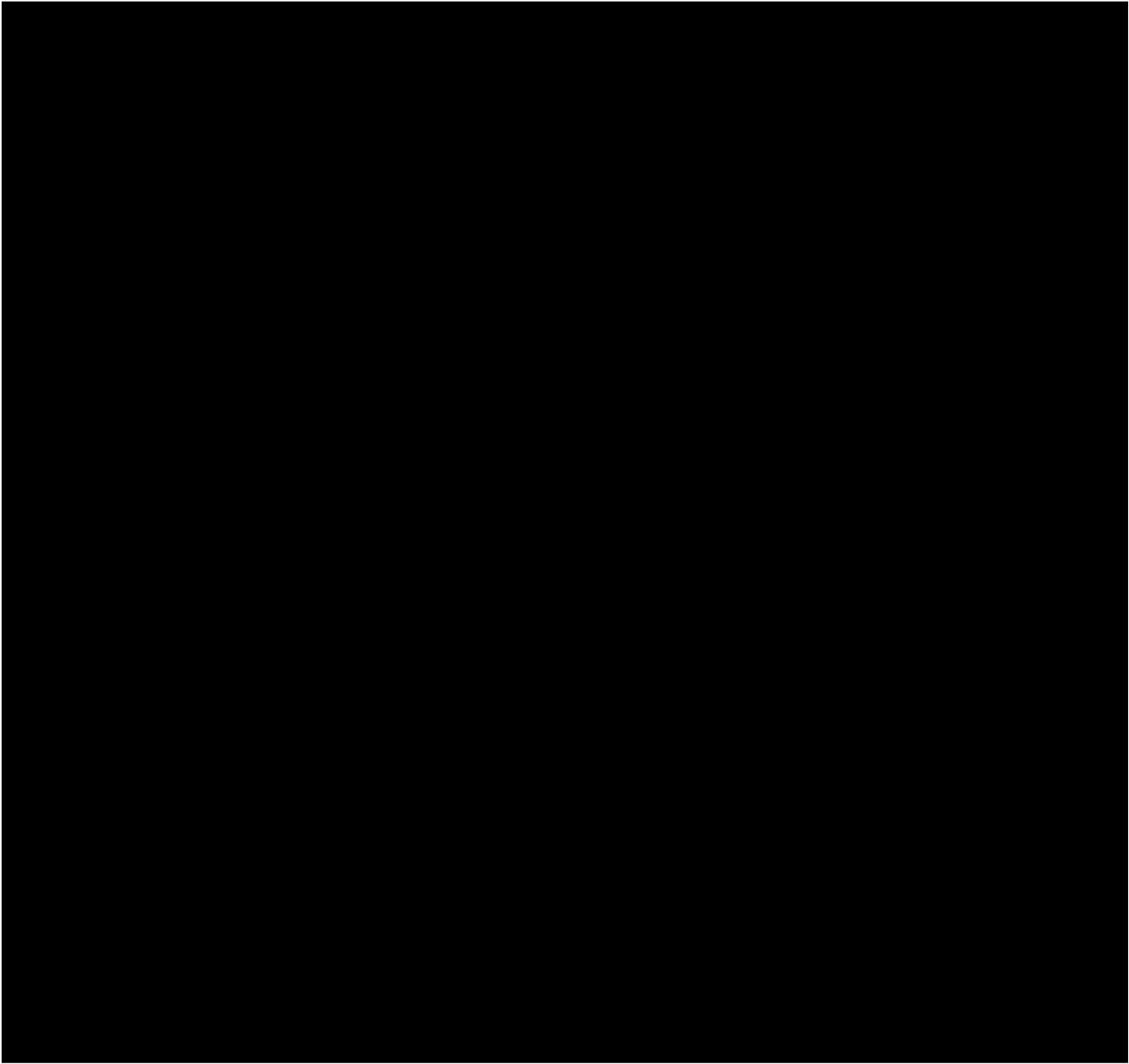
- Concerns were also raised by PTs in connection to the CEB initiative.

CONSIDERATIONS

Climate Lens

- **Assessment costs for non-funded projects:** [REDACTED]

[REDACTED] While Climate Lens costs are retroactively eligible for federal cost-share funding for approved projects, this is not the case for unsuccessful projects. This reflects a longstanding Treasury Board position, which prevents INFC from providing direct funding support to unsuccessful projects.

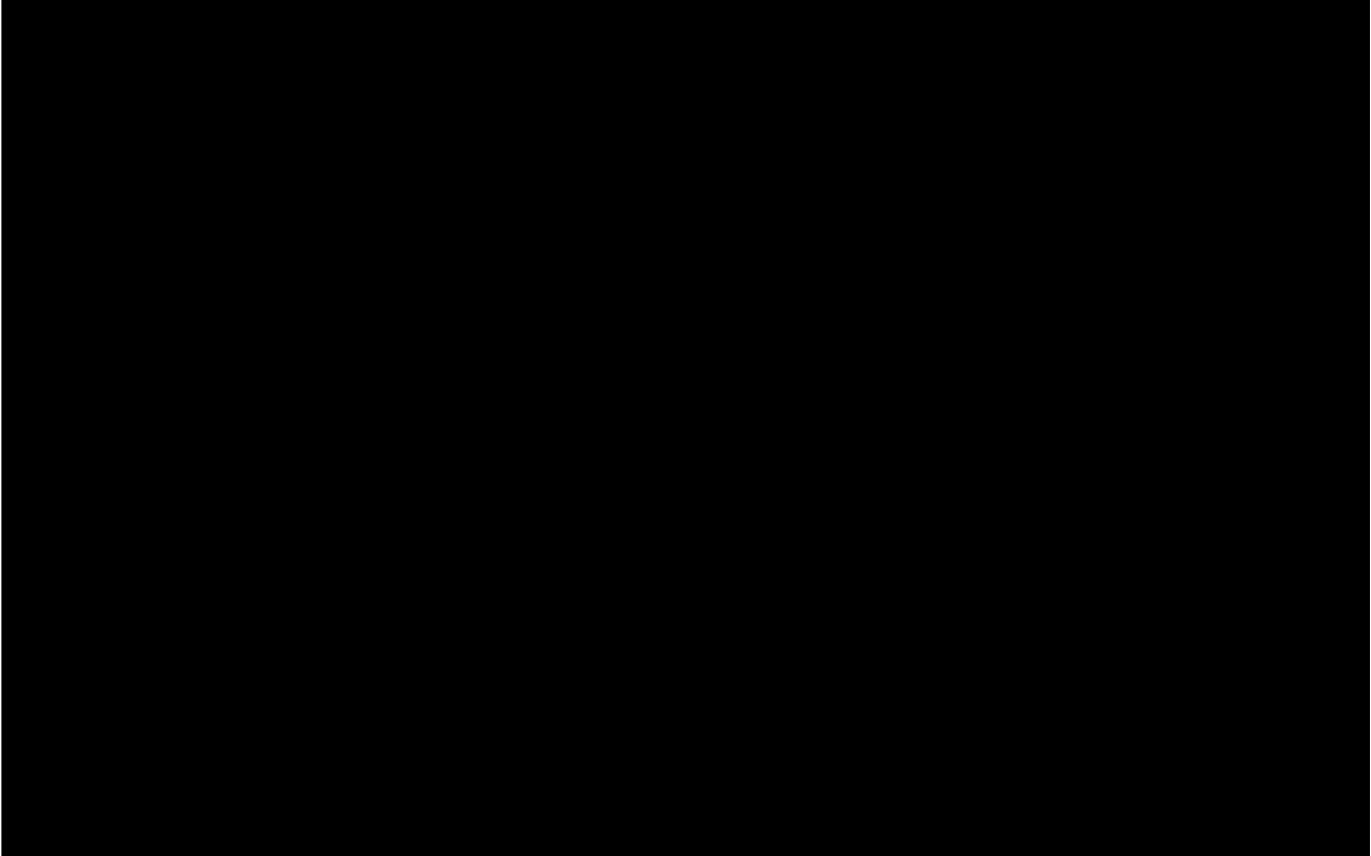


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pursuant to paragraphs
14(a), 21(1)(a), 21(1)(b), 69(1)(g)re:(a), and
69(1)(g)re:(e)
of the *Access to Information Act***

**La/les page(s) 14 à 15
font l'objet d'une exception totale
conformément aux dispositions de
paragraphes
14(a), 21(1)(a), 21(1)(b), 69(1)(g)re:(a), et
69(1)(g)re:(e)
de la *loi sur l'accès à l'information***

ATIA-14(a)	ATIA - 21(1)(a)	ATIA - 69(1)(g) - (a)
ATIA-14(b)	ATIA - 21(1)(b)	ATIA - 69(1)(g) - (d) ATIA - 69(1)(g) - (e)

SECRET



NEXT STEPS

- Department officials continue to monitor feedback from PTs on these issues as negotiations unfold, and would seek to advance the solutions above as appropriate to support the finalization of the Integrated Bilateral Agreements.
- Department officials are available to provide a briefing on the issues and solutions presented above if desired.

David Murchison
Assistant Deputy Minister,
Policy and Results Branch

**DEPUTY MINISTERS' COMMITTEE
ON THE
PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE**

**March 2, 2018
10:00 a.m. to 12:00 p.m.**

**66 Slater Street
9th Floor Boardroom, Room 925**

ANNOTATED AGENDA

1. WELCOME (ECCC & PCO)

2. STRATEGIC INTERTIES (NRCan)

Overview

- Natural Resources Canada (NRCan) will be presenting an update on regional electricity studies to identify promising electricity generation and transmission projects that can reduce greenhouse gas (GHG) emissions. Infrastructure Canada (INFC) will be expected to offer remarks after NRCan's presentation.
- Strategic intertie projects will be critical to meeting Canada's emissions reduction objectives,

[REDACTED] NRCan identifies the Integrated Bilateral Agreements (IBAs) and Canada Infrastructure Bank (CIB) as federal programs to support strategic intertie projects.

- NRCan's presentation also raises questions for discussion of interest to INFC regarding engaging provinces and territories (PTs) to promote interties.
 - Of note, Deputy Minister Christyne Tremblay has been reaching out to her provincial and territorial counterparts to encourage them to raise their electricity priorities with INFC's PT interlocutors and identify transmission opportunities. Further support from provincial and territorial environmental counterparts could bring an increased awareness to the potential GHG mitigation gains that could be achieved.
- INFC (Policy, Program Operations, CIB Transition Office) have provided input to NRCan and indicated that the CIB may not be the most appropriate source of funding for intertie projects (the project would have to meet the CIB's investment criteria, including being structured using a business model that could attract private sector investment).

Interties projects and Integrated Bilateral Agreements

- The deck highlights three potential opportunities for provincial interties: New Brunswick and Nova Scotia; Manitoba and Saskatchewan; British Columbia and Alberta.
- Under the IBAs, PTs are responsible for identifying and prioritizing projects. Provinces must ensure a “fair balance” of provincial and municipal projects, and need to ensure projects benefitting Indigenous peoples are considered for contribution funding.

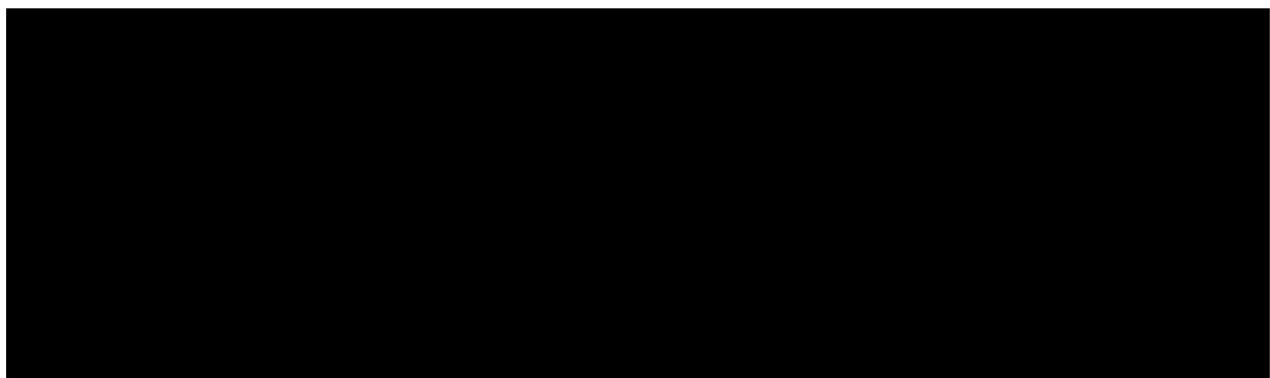
Intertie projects and the Canada Infrastructure Bank

- The CIB will crowd-in private investment that otherwise would not have been attracted to a particular project. It will not displace private capital seeking investment opportunities. The CIB will work with project sponsors and private sector and institutional investors to structure projects so that they meet the needs of all parties and so that risk is appropriately transferred. The CIB’s mandate is to invest in projects, so it is expected that projects will be structured as standalone project companies.

SEE ANNEX A (P9) FOR ADDITIONAL BACKGROUND INFORMATION ON IBAs AND INTERTIES PROJECTS

Points to Register:

- *Thank you for this presentation and all the work you are doing to encourage your provincial and territorial counterparts to consider these intertie projects to achieve results under the Pan-Canadian Framework.*
- *As many of you know, we are in the final stages of concluding the Infrastructure Integrated Bilateral Agreement negotiations with provinces and territories. Negotiations have been going well (for the most part) and we expect to have a number of agreements signed by the end of March.*
 - *In these discussions, a few PTs [REDACTED] have indicated they are considering electricity projects (such as hydro, wind and biomass projects), but we don't have any details yet on what will be proposed.*
 - *Intertie projects could be eligible under the Integrated Bilateral Agreements Green Mitigation stream and would align with the outcome "increased generation of clean energy."*
 - *As with any funding program, whether it is merit-based or allocation-based, the proponent must bring forward the project for funding.*
 - *There are a number of other competing priorities in the provinces and in particular for interties; each province will be considering the trade-offs involved in bringing forward intertie projects.*



- *Regarding the Canada Infrastructure Bank, the CIB is now operational with appropriate range of authorities and open to receiving proposals and engaging with stakeholders. However, its priorities for follow up on proposals will depend on its internal capacity, which will take time to fully develop.*
 - *The CIB will crowd-in private investment that otherwise would not have been attracted to a particular project. It will not displace private capital seeking investment opportunities. The CIB will work with project sponsors and private*

sector and institutional investors to structure projects so that they meet the needs of all parties and so that risk is appropriately transferred. The CIB's mandate is to invest in projects, so it is expected that projects will be structured as standalone project companies.

- *Going forward, Infrastructure Canada will continue to work with NRCan to discuss potential projects, with a view to working with PTs to position the IBAs or the CIB as a potential source of funding or financing, as appropriate.*
 - *There are still outstanding questions regarding total project costs, anticipated emission reductions, and cost-per tonne of potential interties.*
 - *This information could help us and PTs better understand the potential benefits of these projects and determine which intertie projects could be advanced within the IBA funding envelope over the next ten years.*

Proposed Responses to Discussion Questions

- 1) *How can we better use each of our respective engagements with provincial/territorial counterparts to raise the profile of interties?*
 - *In the context of the Investing in Canada Infrastructure Program, our primary partners for the IBAs are generally situated within provincial and territorial ministries of infrastructure or, in some cases, transportation.*
 - *We are encouraging our provincial and territorial partners to engage with their counterparts in the energy and environment ministries to ensure they are aware of their jurisdictional priorities for the electricity sector. Several provinces and territories have established an interdepartmental committee at a senior level to discuss potential IBA projects.*
- 2) *We are counting on interties for significant emissions reductions [REDACTED] if these projects do not advance where will these reductions come from?*
 - *The GHG mitigation funding stream of the IBAs will support a variety of GHG reducing projects, and notably could also be a source of funds for the advancement of renewable energy projects that could further decarbonize the electric grid. However, it is likely that other funding sources would also need to be identified to fully realize the potential for intertie projects with their significant emissions reductions*
- 3) *How do we increase positive incentives for the PTs to advance interties without establishing new programs/funding envelopes?*
 - *The GHG emissions reduction target under the IBAs will clearly signal to PTs that they should be looking for ambitious reductions projects in their forward plans, although ultimately the prioritization of projects remains with the respective PT.*

3. LCEF ROADSHOW AND COLLABORATIVE OPPORTUNITIES (ECCC, ALL)

- INFC will participate in the Low Carbon Economy Fund (LCEF) roadshow as it will provide INFC with an opportunity to address potential questions about the Climate Lens, draw parallels to the LCEF approach, and employ the expertise of Environment and Climate Change Canada (ECCC) officials in responding to more detailed technical questions regarding GHG assessment.

Points to Register:

- *The LCEF roadshow presents an opportunity for collaboration between INFC and ECCC as it could address potential questions about the Climate Lens, draw parallels to the LCEF approach, and benefit from ECCC's expertise in responding to more detailed technical questions regarding GHG assessment.*

4. ROUNDTABLE UPDATES

Budget 2018 (all) (No document)

- Budget 2018 reiterated the Government's plan to invest more than \$180 billion in infrastructure over twelve years. It highlights that the Government is supporting new infrastructure projects and economic activity across Canada, with over 7,800 projects with combined investments of over \$32 billion having been approved to date for communities across the country.
- Budget 2018 also notes that the Government is finalizing negotiations with the provinces and territories to provide long-term funding through IBAs.
- Budget 2018 proposes delivering \$20 million over five years, starting in 2018–19, through ECCC to fulfill the Pan Canadian Framework (PCF) commitment to engaging external experts to assess the effectiveness of its measures and identify best practices. This measure will ensure that the actions established under the PCF are transparent and informed by science and evidence. INFC programs that support PCF objectives could learn from best practices identified through this process.

Points to Register:

N/A – No immediate implications for INFC.

Federal clean technology initiatives (ISED & NRCan) (Document not yet received)

- Innovation, Science and Economic Development Canada (ISED) will update the committee on the implementation of key clean technology initiatives including an

update on the Clean Growth Hub. The Clean Growth Hub is the whole-of-government focal point for supporting clean-technology companies looking for federal support and assistance for their projects.

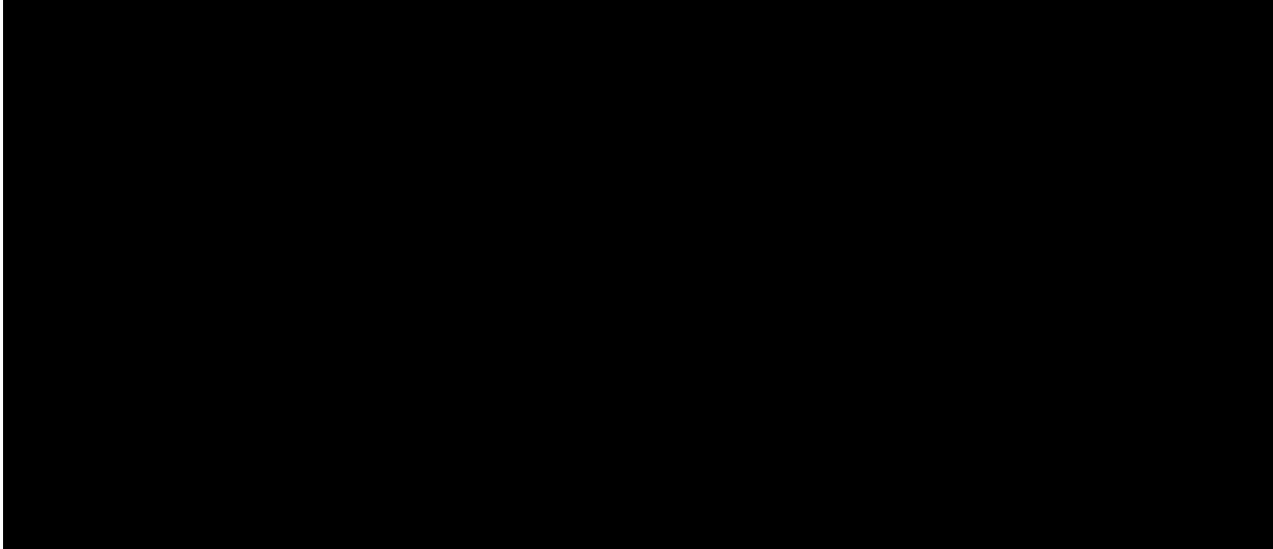
- Since the launch of the Hub in January 2018, companies seeking support from the Hub have ranged from very small start-ups to very large multinationals, with a wide variety of different challenges and opportunities, covering all stages of innovation from early R&D to export and trade support.
- The Hub is currently working on the administrative data component of the Clean Technology Strategy, and will examine information based on a recent Treasury Board review of federal government innovation programs to further understand administrative information collected and how it is used.
- Of note, in early January, INFC officials held introductory meetings with the Clean Growth Hub to discuss the functions of the Hub and how INFC could leverage the Hub as a resource. Going forward, INFC will continue to explore potential opportunities engage the Hub and work on joint priorities, which could include increasing awareness of the Hub among INFC's stakeholders (provinces, territories, municipalities) and learning from the Hub's work on administrative data to see if there are opportunities and linkages with INFC's data and research strategy.

Points to Register:

- *INFC is interested in hearing about the outcomes and findings of the Hub's work on the administrative data component of the clean technology data strategy as we are developing our own data and research strategy.*

Market transformation in energy-using equipment (NRCan)

- NRCan will be presenting their plan for equipment standards to support the transition to a low-carbon buildings sector, including key risks and challenges, and how to leverage upcoming publication of updates to the Energy Efficiency Regulations and Energy and Mines Ministers' Conference equipment roadmaps to highlight progress on implementation of PCF objectives and advance low-carbon priorities in the built environment.
- These equipment standards will support market transformation by eliminating low efficiency products and promoting high efficiency products (Energy Star Certified) to accelerate market uptake to help Canada meet its GHG emission mitigation goals.

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- Regarding implications for INFC, energy efficiency in public buildings is an eligible project outcome under the Climate Change Mitigation sub-stream of the Investing in Canada Infrastructure Program.
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GLOBE Forum 2018 (ISED) (*Document not yet received*)

- GLOBE Forum and Innovation Expo is North America's longest running sustainability conference that brings together corporations, all levels of government, NGOs, international agencies, technology innovators, and the finance community to manage risks and capitalize on the opportunities in the clean economy.
- Gerard Peets from the Smart Cities challenge will be participating in a session entitled The Road to Smart Cities is Data Driven.

Points to Register:

N/A – No immediate implications for INFC.

Annex Documents

- 1a. DM Committee – March 2
- 2a. Strategic Interties Summary
- 2b. Strategic Interties Deck
- 3a. Draft LCEF Calendar
- 4a. No documents made available at this time
- 4b. Equipment Standards Deck
- 4c. No documents made available at this time

- 5a. PCF Milestones and Events Calendar**
- 5b. PT Engagement Calendar**
- 5c. Forward Agenda**
- 5d. Record of Decision DMC (January 31)**

ANNEX A TO THE ANNOTATED AGENDA

ADDITIONAL BACKGROUND ON INTERTIES AND INTEGRATED BILATERAL AGREEMENTS

Under the IBAs, INFС has taken an outcome-based approach focused on results. Projects must align with at least one outcome. Under green mitigation sub-stream the outcomes are:

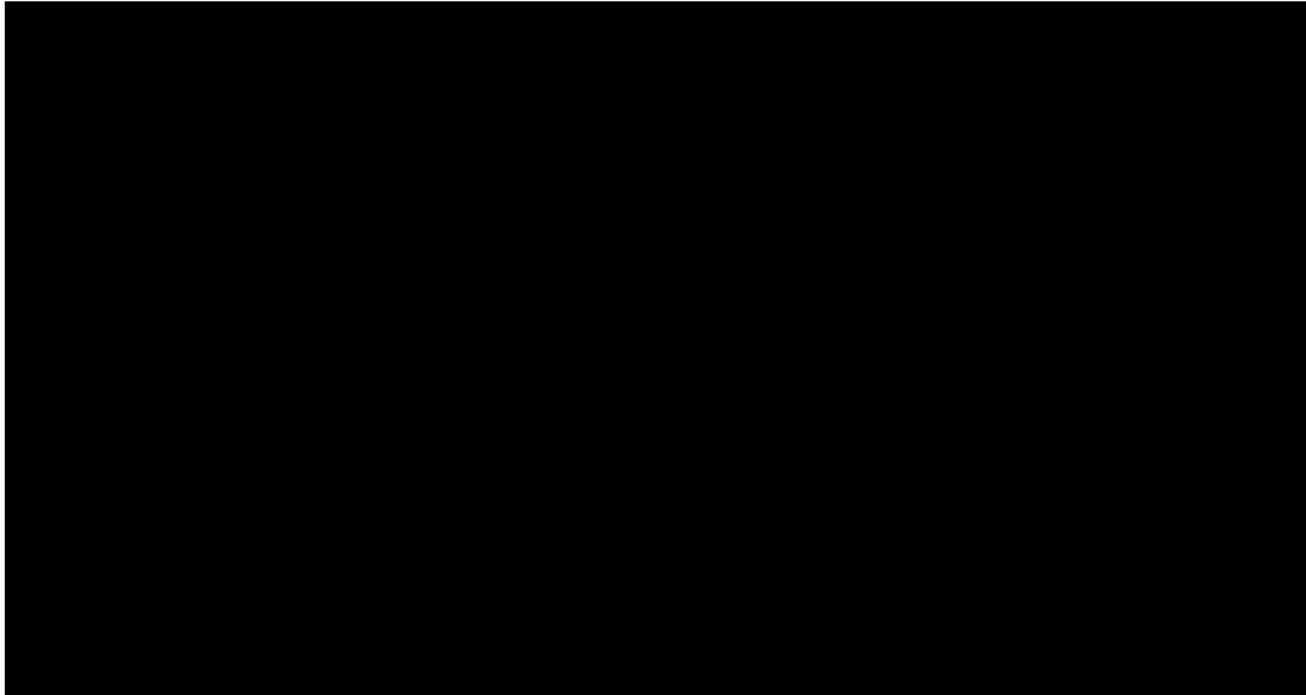
- Increased generation of clean energy
- Increased energy efficient buildings
- Increased capacity to manage renewable energy

Specific requirements relevant for GHG emissions reduction more generally:

- 45% of Green Stream is for mitigation projects (over \$4B)
- Mitigation and adaptation/resilience Climate Lens assessments are mandatory under their specific sub-streams
- GHG mitigation sub-stream projects must include a cost-per-tonne analysis in their Climate Lens mitigation assessment
- The IBAs include an overall 10 MT GHG emissions reduction target

INFС also requires the PTs to provide a three-year plan that includes an overview of how PTs plan which includes a list of known projects that will be coming forward (large investments, contribution towards targets). This will help INFС engage early with PTs on priorities for funding and support better planning for large projects that will require TB approval.

Status of IBA negotiations:



**DEPUTY MINISTERS' COMMITTEE ON THE
PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE**

**March 2, 2018
10:00 am to 12:00 pm**

**66 Slater Street
9th Floor Boardroom, Room 925**

AGENDA

1. Welcome (*ECCC & PCO*)
2. Strategic Interties (*NRCan*)
3. LCEF Roadshow and Collaborative Opportunities (*ECCC, all*)
4. Roundtable Updates
 - Budget 2018 (*all*)
 - Federal clean technology initiatives (*ISED & NRCan*)
 - Market transformation in energy-using equipment (*NRCan*)
 - GLOBE Forum 2018 (*ISED*)

Annex Documents:

1. PCF Milestones and Events Calendar
2. PT Engagement Calendar
3. Forward Agenda
4. Record of Decision (Jan 31)

DEPUTY MINISTER OVERSIGHT COMMITTEE ON THE PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE

Title: Update on Strategic Interties

Item to be presented by: Christyne Tremblay, Deputy Minister, Natural Resources Canada

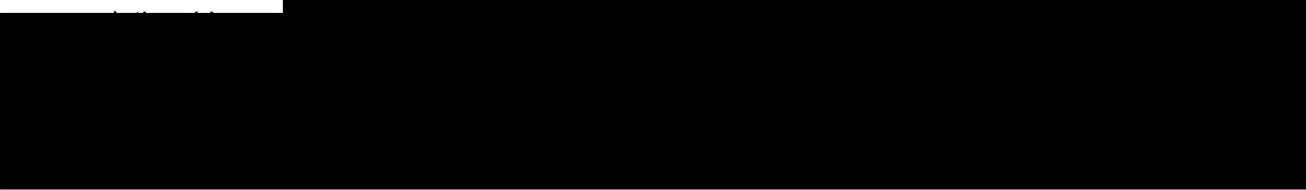
Objective

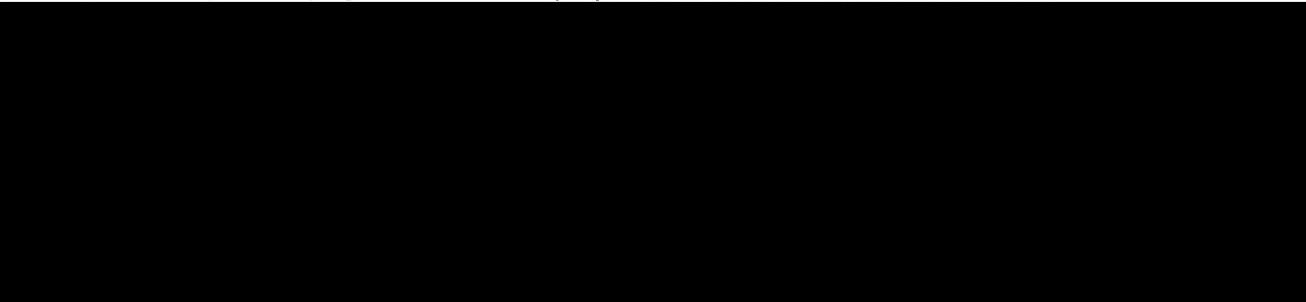
- To provide an update on NRCan's work with provinces to study electricity interties, and to discuss and seek guidance on the challenges and opportunities regarding potential federal funding for intertie projects.

Context/Current Status

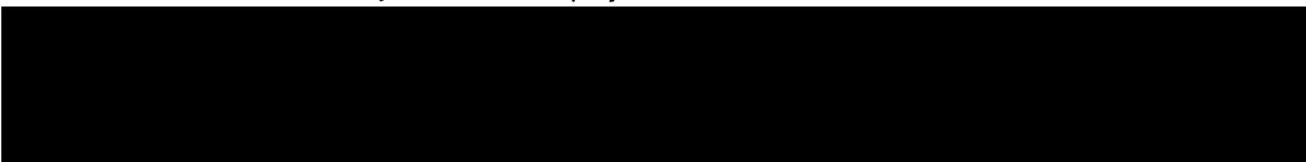
- NRCan is in the process of concluding its regional electricity studies with the Western and Atlantic Provinces and relevant electric utilities. These studies will identify the most promising electricity generation and transmission projects that can reduce greenhouse gas emissions. Final results are expected in the coming week, with summary reports to be published shortly thereafter.
- Strategic interties are important for the Government of Canada because of their potential to directly support significant greenhouse gas emissions reductions in the electricity sector, as well as indirectly via electrification. The primary federal levers for supporting these projects are the Green Infrastructure stream of Infrastructure Canada's Integrated Bilateral Agreements (IBAs) and the Canada Infrastructure Bank (CIB).
- Preliminary results identify both smaller and relatively more advanced electricity transmission projects that could potentially be supported through Green Infrastructure IBAs, as well as larger transformative projects, which may be potential candidates for consideration by the CIB.
- The key advanced projects that have been identified as potential early wins are between:
 - Nova Scotia (NS) and New Brunswick (NB)
 - Saskatchewan (SK) and Manitoba (MB)
 - British Columbia (BC) and Alberta (AB)
- INFC intends to sign IBAs with provinces and territories by March 31, 2018, after which each province and territory will be responsible for prioritizing projects for funding.
- Provinces must direct a minimum of 45 percent of their allocation towards projects under the Climate Change Mitigation sub-stream of Green Infrastructure, which could include projects that increase capacity to generate more clean energy and increase capacity to manage more renewable energy.
 - These projects will be required to submit GHG mitigation assessments demonstrating expected reductions in GHG emissions.
 - The degree to which the Green stream supports large-scale electricity projects, such as grid interties, will depend primarily on whether the provinces or territories choose to prioritize these projects for funding.
 - Project costs will also be a factor, as provinces would need to balance potential electricity projects with other climate change mitigation priorities.
- Deputy Minister Tremblay has held bilateral calls with NS and NB, as well as SK and MB to discuss the most prospective electricity interconnection projects that could be supported through

IBA allocations.



- For larger intertie projects, NRCan will work with PTs and their utilities to refer these projects to the CIB. Prospects for financing intertie projects through the CIB may be limited given the prevalence of public utilities in the Canadian electricity sector but there may be certain types of projects or project structures that may be feasible for financing, provided that they can be structured as a business model that can generate revenue and attract private sector investment. CIB will work with potential partners to assess whether these projects could be structured in such a way as to be suitable for CIB investment.
 - The CIB Transition Office is finalizing its “project flow” model with Central Agencies. This is the process by which projects move from proponents to the CIB for consideration.
- 

Considerations/Risks

- The CIB is now operational with appropriate range of authorities and open to receiving proposals and engaging with stakeholders. However, its priorities for follow up on proposals will depend on its internal capacity, which will take time to fully develop.
 - NRCan has been in regular communication with the CIB Transition Office regarding prospects for it to finance electricity infrastructure projects.
- 

Next Steps / Critical Path / Milestones

- Final results from the regional studies are expected soon, providing a useful basis for discussions with PTs.
 - NRCan will be working over the coming weeks to develop several “archetypal” intertie projects that are representative of the range of projects that might be considered. These archetypes could then be provided to the CIB via the CIB Transition Office in order to get a preliminary indication as to whether they could fit within the CIB’s mandate and criteria.
- 

Decision Points

- Nil.

Supporting Documents

- Nil.

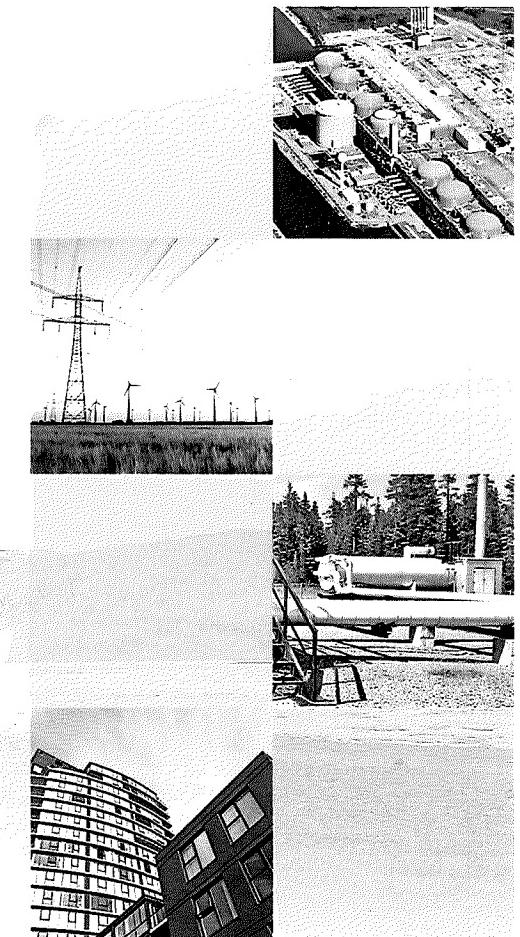


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Implementing Strategic Interties to support the Pan-Canadian Framework

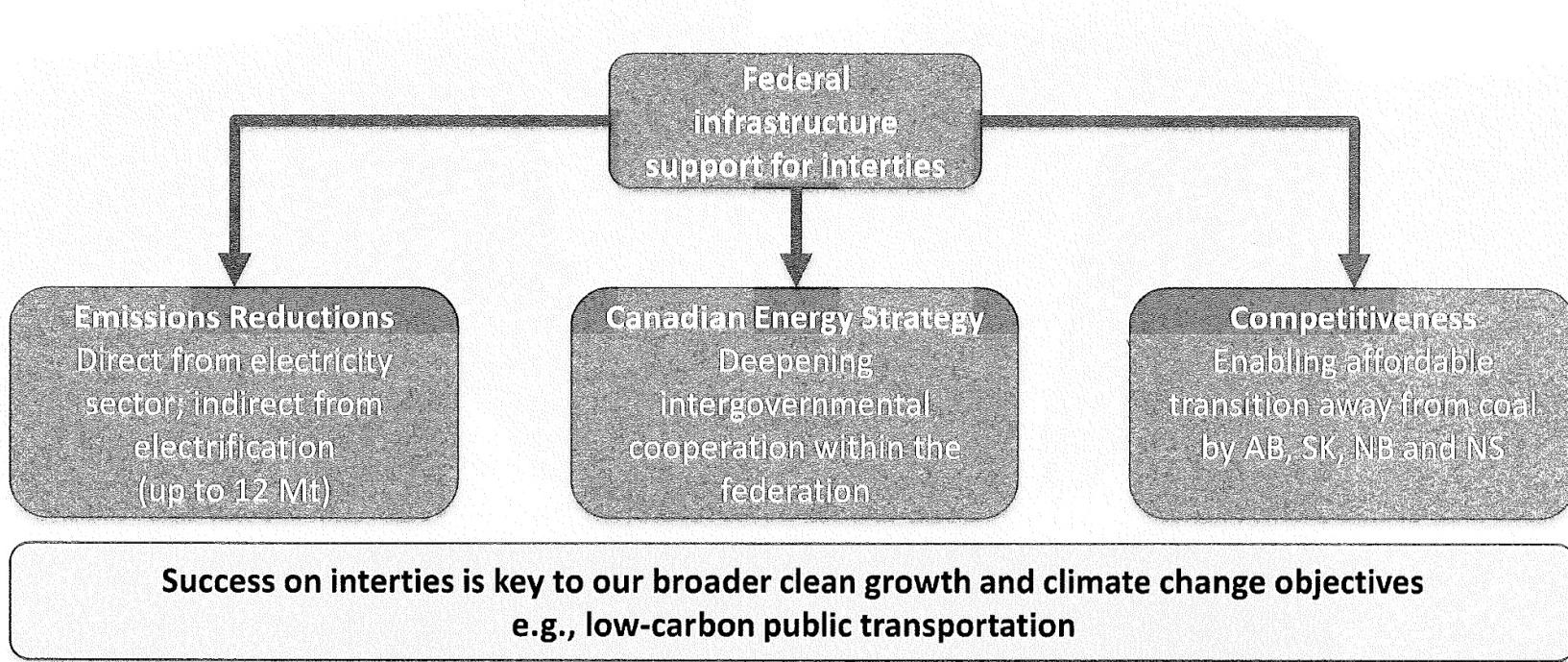
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Strategic interconnections are at the centre of multiple government priorities

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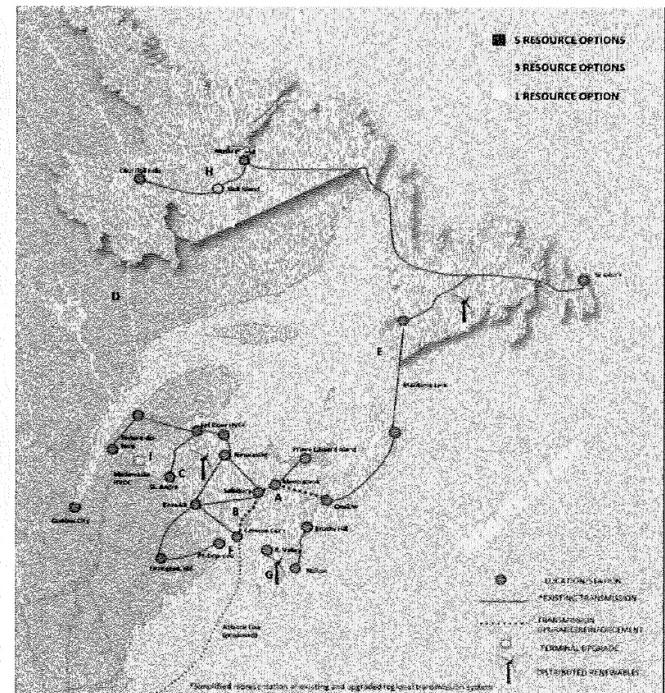
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NRCan Regional Dialogues are identifying opportunities

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- Identifying promising electricity infrastructure projects with potential for GHG reductions
 - Other intertie projects may have merit based on their economic development potential (e.g., electrification of remote mining sites)
- Dialogues formed among 4 Western provinces (+ NWT) and 4 Atlantic provinces
- Variety of electricity supply and transmission options under consideration
- The results will include some economic impacts (i.e. costs to electricity consumers)
- Analytical and modelling results to inform future infrastructure investment decisions
- Results by end of March 2018

Atlantic RECSI Scenarios



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Senior-level engagement is helping to focus provincial attention

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Degree of federal support shifts costs from the local rate base to the federal tax base



Larger, transformational projects will have correspondingly larger impacts and costs



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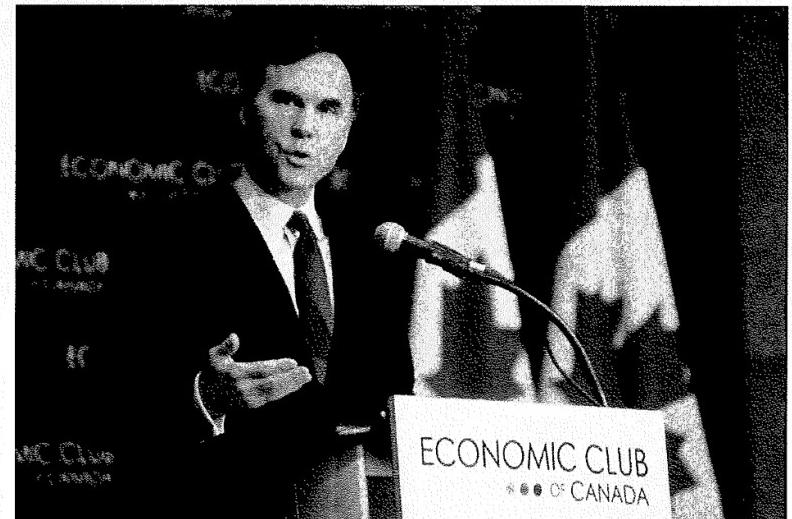
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Federal infrastructure supports can help projects advance

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Primary federal levers for supporting interties:

1. INFC's Canada's Integrated Bilateral Agreements (IBAs)
 - Electricity projects (including interties) face many competing infrastructure priorities
2. Canada Infrastructure Bank (CIB)
 - Certain types of projects that leverage private sector involvement may be feasible for financing, but not all



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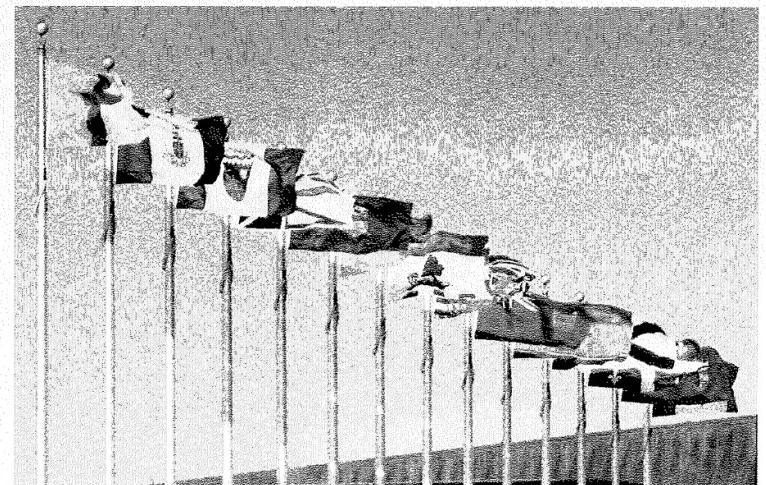
Next steps leading to success

Coming months:

- Finalize results of regional dialogues
- Secure provincial support for inclusion of interties as candidate for IBA support
- Continued work with CIB to assess suitability of intertie projects for Bank

Medium-term:

- Build on in-principle support for interties to secure agreement on early-wins



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Questions for Discussion

- How can we better use each of our respective engagements with PT counterparts to raise the profile of interties?
- We are counting on interties for significant emissions reductions [REDACTED] if these projects do not advance where will these reductions come from?
- How do we increase positive incentives for the PTs to advance interties without establishing new programs/funding envelopes?



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Draft LCEF Challenge Roadshow

March 2018						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
11	12	13	14	15	16	17
			Globe	Globe	Globe	
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
18	19	20	21	22	23	24
	Victoria	Vancouver	Edmonton	Edmonton	Calgary	
				Moncton	Charlottetown	
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	31
	Toronto	Montreal	NCR			
		Halifax	St. John's			

April 2018						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
		Regina	Winnipeg	Winnipeg	Saskatoon	
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8	9	10	11	12	13	14
		Whitehorse	Iqaluit	Yellowknife		

West / Central

East /
North

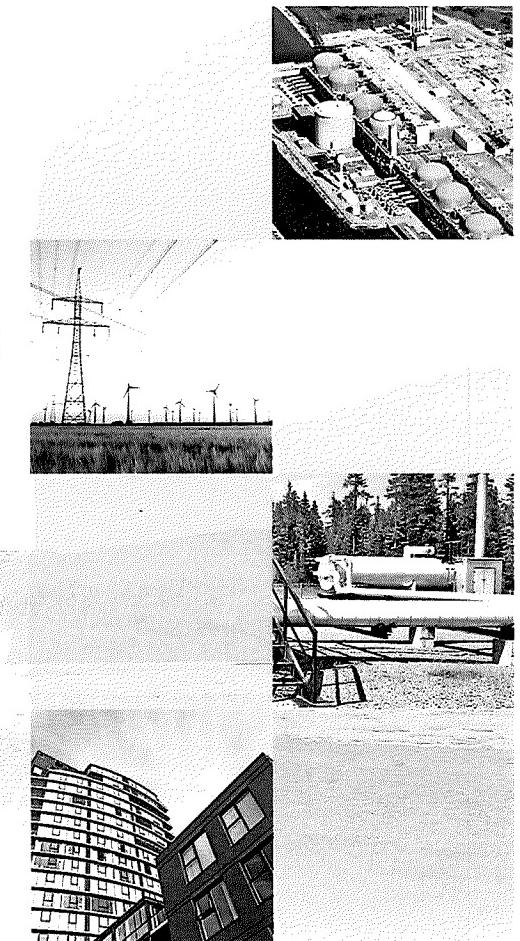


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Buildings: Market transformation in energy-using equipment

Enabling transformative change toward
a low-carbon buildings sector

Presentation to the
DM Pan-Canadian Framework (PCF) Committee
March 2, 2018



Canada

PURPOSE

01.

Explain the plan for equipment standards to support the transition to a low-carbon buildings sector

02.

Outline key risks and challenges

03.

Identify next steps

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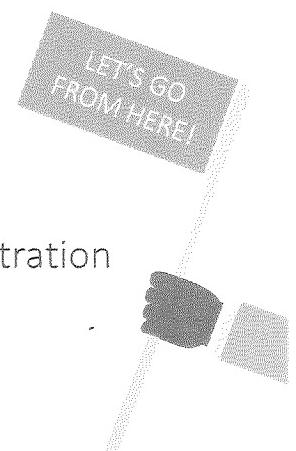
A BIT OF BACKGROUND

THE PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH & CLIMATE CHANGE (PCF)

- Canada's First Ministers adopted the PCF in December 2016
- It is built on **four pillars**—carbon pricing, complementary actions to reduce emissions across the economy, adaptation and climate resilience, and clean technology, innovation, and jobs
- Energy efficiency is a key component of the PCF

BUILD SMART: CANADA'S BUILDINGS STRATEGY

- Energy codes for new buildings
- Energy codes for existing buildings
- Energy labelling and disclosure
- New standards for equipment and appliances
- Research, development, and demonstration



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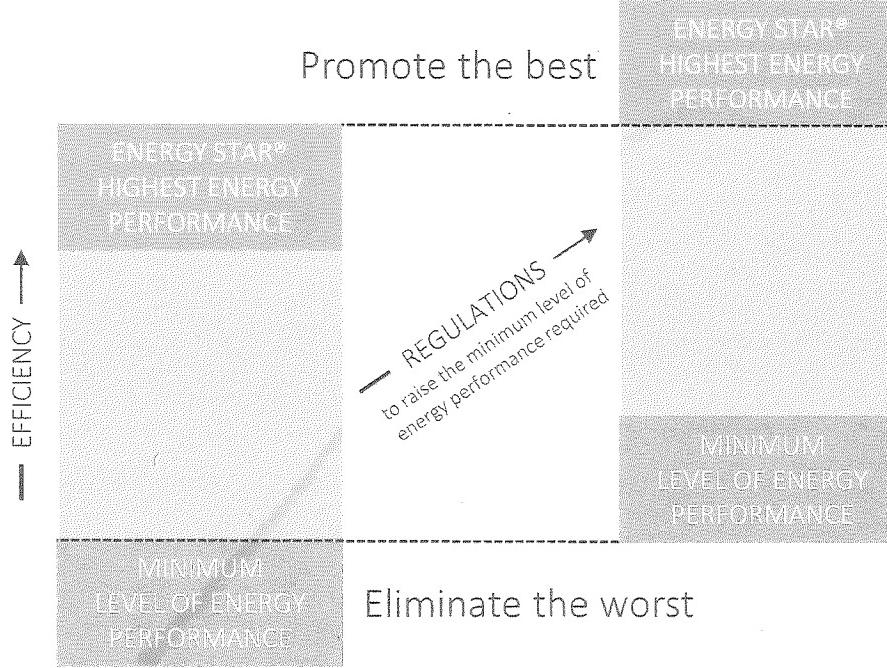
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EQUIPMENT STANDARDS

THE MOST EFFECTIVE FEDERAL LEVER TO REDUCE ENERGY USE AND EMISSIONS FROM BUILDINGS

Moving the market to eliminate products with the lowest level of efficiency and promote those with the highest



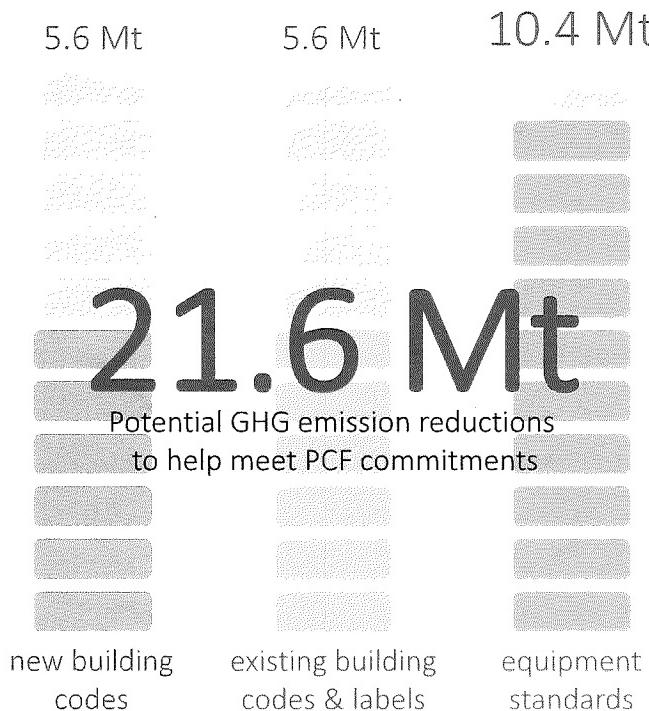
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THE IMPACT OF EQUIPMENT STANDARDS IS SIGNIFICANT



BENEFITS

- Lower costs: Negative economic cost per tonne
Energy costs are reduced for Canadians (Amendment 14 – \$4.5B)
- Clean tech is spurred: Manufacturers innovate to meet increasing ENERGY STAR® levels
- Long-term decarbonisation: Amendment 14 will save enough electricity to power one million electric vehicles by 2030

Equipment standards can form the backbone of building codes. Equipment standards enable significant energy gains in existing buildings, while providing the foundation for national model building codes.

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REACHING SUCCESS

REQUIRES TRANSFORMATIVE CHANGE IN HOW CANADIANS HEAT THEIR HOMES AND BUILDINGS

KEYS TO SUCCESS

- Clear market signals about long-term energy performance goals
- Accelerated transformation of the supply chain in Canada
- R&D, market stimulation, and standards focused on the same outcomes

MARKET TRANSFORMATION (FPT STRATEGIES REPORT RELEASED AUG. 2017)

- Sets agreed-upon energy performance goals for heating and windows
- Categorizes market barriers to achieving goals
- Signals the development of a roadmap to reach goals

IMPACT

Heating represents up to 80% of energy use in Canadian homes and buildings. If all residential space and water heating systems were replaced with next generation heat pumps, total home energy use would decrease by 30% and reduce GHG emissions by 21 Mt

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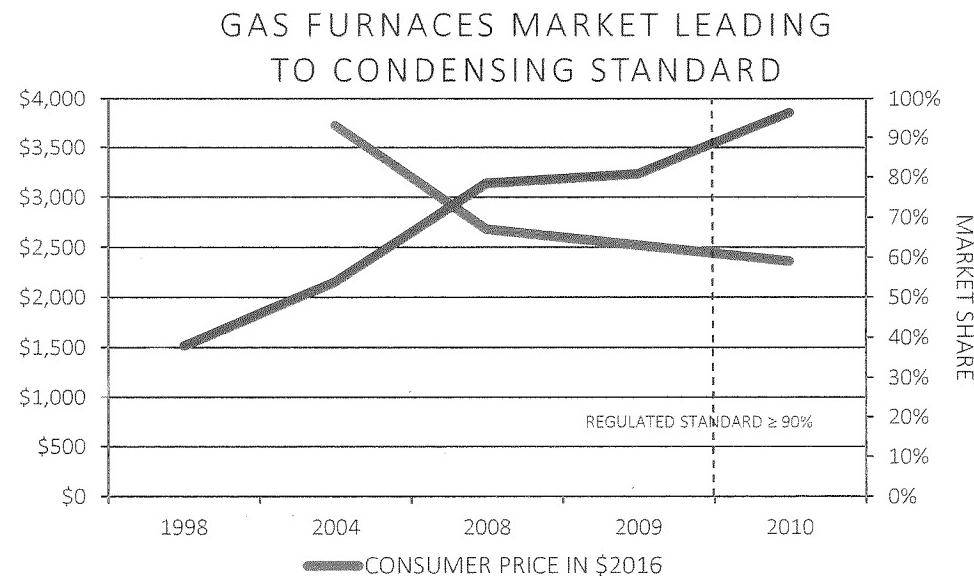
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WE KNOW THE RECIPE

THE RESIDENTIAL GAS FURNACES MARKET WAS SUCCESSFULLY TRANSFORMED FROM 2000 TO 2010

- In 1999, NRCan and industry identified barriers and activities to advance the market for high efficiency “condensing” furnaces
- Key Measures: R&D, demonstrations, test procedures, incentives, labelling
- Impact: Between 1998 and 2008 market shares increased from 40% to 80% and price dropped by 30%, paving the way for national minimum performance standards in 2010



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TRANSFORMATIVE CHANGE

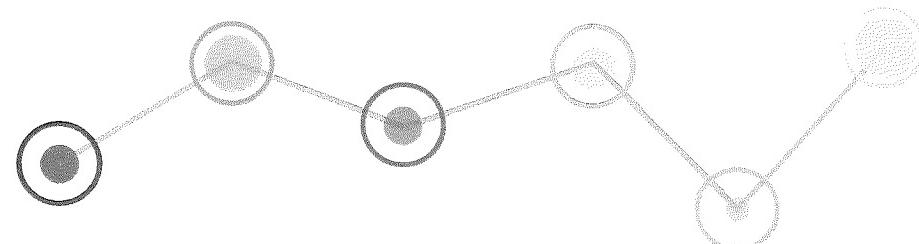
REQUIRES A DELIBERATE ROADMAP TO OVERCOME MARKET BARRIERS

FPT GOVERNMENTS WILL DELIVER A ROADMAP TO EMMC 2018

- To delineate concrete measures and timelines to achieve long-term energy performance goals
- To be developed in partnership with > 60 stakeholders across the economy (e.g., manufacturers, utilities, home builders)
- To be complemented by immediate federal action to increase the stringency of federal standards and ENERGY STAR® levels

EXPECTED OUTCOMES

- Sustained GHG emissions reductions
- Access to high-performance tech that is cost-effective and operates well in Canada's climate
- R&D investments that support emerging tech
- Contractor expertise and a strong manufacturer base in Canada to supply, install, and maintain tech
- International opportunities for leading Canadian manufacturers
- Codes and standards that are complementary and provide a level playing field across Canada



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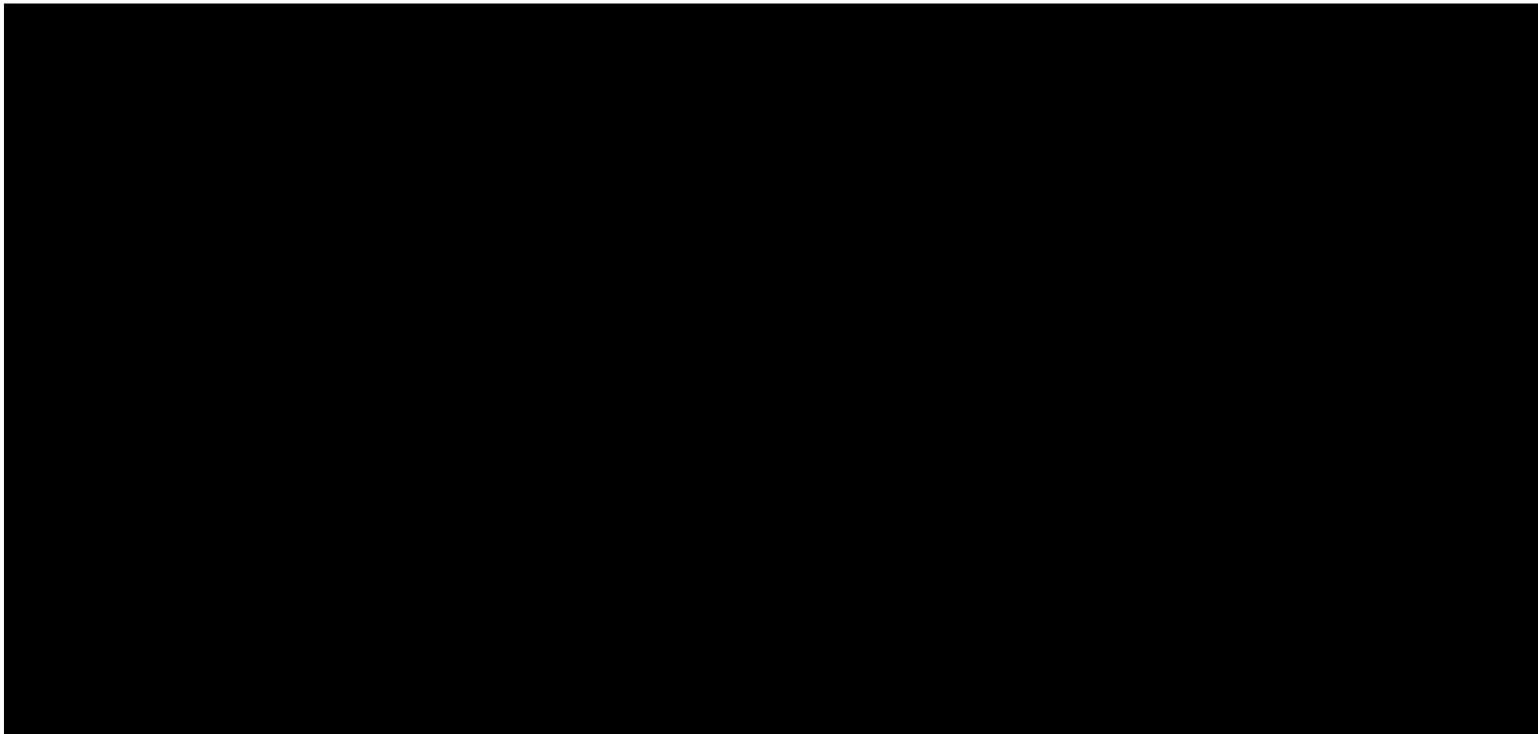


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KEY CHALLENGES AND RISKS



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NEXT STEPS

WHAT WE NEED

- **Elevate** the priority of equipment regulations and roadmaps to maintain credibility with stakeholders, and demonstrate federal leadership on buildings
- **Timelines** - Keep an eye on short term but also on long term – to make sure we hit Mt targets in 2030
- Active **stakeholder engagement**
- **Leverage** other federal programs (e.g. clean tech R&D, greening government) to support commercialization and deployment of next generation technologies in parallel with new standards, e.g. create the market in real time



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Thank you 



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March 2018

PCF Milestones and Events- DRAFT (for input and comment)

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PCF Component	March 2018	April 2018	May 2018	Rest of 2018
Carbon Pricing				<p>Launch competitiveness review for carbon pricing</p> <p>Draft regs in CGI: for carbon pricing backstop OBPS</p> <p>Consultations on OBPS regulations</p>
Mitigation	<p>Just Transition Taskforce</p> <p>Completion of Atlantic and Western RECS studies</p> <p>Amendment 14 to the Energy Efficiency Regulations pre-published in CGI (Date TBD)</p> <p>National Trade Corridors Fund: First Call for Proposals (Jul 2017-Early 2018)</p> <p>Canadian Agricultural Partnership (Aug 2017-Mar 2018)</p>	<p>Canadian Agricultural Partnership launched (Apr 1, 2018)</p>	<p>Final regs in CGI: HDV</p>	<p>FPT Roadmaps to implement market transformation strategies for energy-using equipment are published (Aug 2018)</p> <p>Draft regs in CGI: Clean Fuel Standard</p> <p>Consultations on the draft Clean Fuel Standard regulations (completed by Fall)</p> <p>Final regs in CGI: coal, methane, and natural gas</p> <p>Discussion paper: off-road transportation</p>
Adaptation	<p>DMAF (Disaster and Mitigation and Adaptation Fund) Launch</p> <p>Launch of the Prairie Climate Centre's National Climate Atlas of Canada</p>	<p>Expert Panel on Climate Change Adaptation and Resilience Results-Final Report</p>	<p>National Adaptation Platform (Spring 2018)</p>	<p>Launch of Canadian Centre for Climate Services Portal (Date TBD)</p>
Clean Tech	<p>GLOBE Summit, Vancouver (Mar 14-16)</p>			<p>Launch of Impact Canada clean technology prize-based challenges</p>

LEGEND	Consultation or Negotiation	Meeting or Event	Key Milestone or Document	Legislation or Agreement	

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ATIA -69(1)(g) - (c)

PCF Component	March 2018	April 2018	May 2018	Rest of 2018
PCF Reporting		Publication of Final national Inventory		2 nd Annual PCF Synthesis Report
Domestic Climate Change Related Funding	Infrastructure IBAs signed (Mar 2018) Engagement and negotiations with PTs on IBAs for infrastructure	Canadian Institute for Clean Growth and Climate Change Provincial Announcements of Leadership Fund LCEF Challenge Fund - announcement and call for proposals (Date TBD)		
International events		Expert Panel on Climate Change Adaptation and Resilience Results-Final Report	9th Clean Energy Ministerial (CEM9)/3rd Mission Innovation Ministerial (MI-3) – May 23-24, 2018, Copenhagen/Malmö.	COP24 Poland (Dec 3-14) G7 Summit (June 8-9) Canada-China Ministerial Dialog on climate change 47th and 48th Sessions of the IPCC

Page 2 of 3

LEGEND	Consultation or Negotiation	Meeting or Event	Key Milestone or Document	Legislation or Agreement	

- ECCC
- TBS

- ISED

- NRCan

- Infrastructure Canada

- Transport Canada

- CMHC

- PCO

Date	Meeting	Place	Province(s) / Territories	Attendees	Items for discussion
MARCH					
Early March (TBC)	FPT Energy Codes Implementation Group	Teleconference	Multilateral	Sarah Stinson, Director, Buildings and Industry Division, NRCan	Building energy codes implementation and support discussion.
March 12	In-person meeting of the FPT Working Group on Clean Growth	Vancouver	Multilateral	Catherine Peters, Director, Policy and Research, Clean Technology and Clean Growth Branch, ISED	Progress on FPT collaboration to implement the joint two-year workplan to advance clean growth
March 13	FPT Working Group on Clean Growth participation at the Clean Technology Economic Strategy Table engagement session on <i>Market Development and Trade</i>	Vancouver	Multilateral	Catherine Peters, Director, Policy and Research, Clean Technology and Clean Growth Branch, ISED	How to create strong domestic market for clean technology and tap into global clean technology trade and investment opportunities in key markets
March 22 nd	Electric Vehicle and Alternative Fueling Infrastructure Deployment Program	Online	Multilateral	TAFD's Electric Vehicle and Alternative Fueling Infrastructure Deployment Program	Deadline to submit applications
March 31 st	Electric Vehicle and Alternative Fueling Infrastructure Deployment Program	Online	Multilateral	TAFD's Electric Vehicle and Alternative Fueling Infrastructure Deployment Program	End of Phase 1 of program
APRIL					
April 1 st , 2018	SmartWay Fleet Energy Audit Program	Online (web-based)	Multilateral	TAFD's SmartWay program	Program Launch Tools and program specifics being developed with provinces and territories at the moment

• ECCC

• ISED

• NRCan

• Infrastructure
Canada

• Transport
Canada

• CMHC

• PCO

• TBS

Date	Meeting	Place	Province(s) / Territories	Attendees	Items for discussion
TBD	Electric Vehicle and Alternative Fueling Infrastructure Deployment Program	TBD	Multilateral	TAFD's Electric Vehicle and Alternative Fueling Infrastructure Deployment Program	Project recommendations under Phase 2

February 16, 2018

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FORWARD AGENDA

**ADM AND DM OVERSIGHT COMMITTEES ON THE
PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE**

- EV and Alternate Fuel Infrastructure Deployment Initiative (NRCan)
- Canadian Centre for Climate Services (ECCC)
- Buildings Strategy Update (NRCan)
- Carbon Pricing – Backstop Legislation (ECCC)
- Federal Institutional Resilience (ECCC and TBS)

- Canadian Agricultural Partnership (AAFC) (TBC)
- Climate Actions in the Agriculture Sector (AAFC)
- Clean Energy Ministerial and Mission Innovation Ministerial (NRCan)
- Greening Government Operations (TBS)
- Adaptation and Climate Resilience Communications Strategy (ECCC)
- Expert Panel on Climate Change Adaptation and Resilience Results (ECCC)

- Working with Indigenous Peoples to Implement the PCF (ECCC)
- Northern Adaptation Strategy (CIRNA)
- Clean Growth Hub (ISED, NRCan)
- International Climate Change Negotiations (ECCC)

Roundtable items:

- National Zero Emissions Vehicle Strategy (TC)
- Proposed Response to Collaborative Audit Report on Climate Change (ECCC)
- G7 Environment Ministers Meeting Preparation (ECCC)
- Updated Greenhouse Gas Emission Projections (ECCC)
- 2050 Emission Reduction Target (ECCC)
- Communications Update (ECCC)
- Heavy Duty Vehicle Retrofit Requirements (TC)

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ATIA - 19(1)	ATIA - 21(1)(b)

DRAFT

Deputy Minister Oversight Committee on the PCF Record of Discussion – January 31st, 2018

1. Welcome

- The January 31 DM Oversight Committee meeting agenda was adopted without change.
- The Record of Decision (ROD) from the November 29, 2017 meeting of the DM Oversight Committee (DMOC) was approved without change.

2. Federal Climate Change Science Plan

- George Enei (ECCC) provided an overview of the Targeted Federal Climate Change Science plan, focusing on 5 main themes, with 18 proposed (7 new, 11 existing, but amplified) activities. This version of the Plan is a foundational and collaborative iteration supporting informed, evidence-based, and decision-making.
- The Plan touches on social science in most of the activities, with pillar 5 focused on the Human Dimensions of Climate Change. Implementation of the Plan will be guided by a DG or Director-level Committee, and report to the DMOC periodically.

- Ted Hewitt (SSHRC), Mario Pinto (NSERC), [REDACTED]

- Key issues raised in discussions included:
 - Consideration of public reaction to the Plan
 - Identification of previous impediments and issues, gaps, and expected outcomes
 - Enhance close interdepartmental collaboration to leverage GoC funds
 - Importance of recognizing a distinction-based model for Indigenous Knowledge
 - Emphasis on determinants of resilient communities
 - Opportunity to develop a Canadian climate science strategy, workshop with PTs, Indigenous groups and the extended research community

➔ **Action item:** Ad-hoc DM committee to be established.

- **Next step:** ECCC to revise plan to identify closer outcomes/policy links to PCF; broaden to a national version (roadmap), refine certain references relating to Indigenous Knowledge; set up Ad-hoc committee

➔ **Action item:** Plan will come back to the DMOC for discussion when appropriate.

3. Carbon Pricing

- John Moffet (ECCC) presented an update on carbon pricing, including key timelines for PTs to confirm their respective plans. PTs choosing the federal backstop are to confirm by March 30, 2018, and those implementing/maintaining their own systems will confirm by September 1, 2018.
- The consultation process is underway interdepartmentally and externally
- PT engagement is ongoing, [REDACTED]
- Key issues raised in discussions included:

➔ Action item: Return to PCF DMOC as required.

4. National Zero Emission Vehicles Strategy

- Michael Keenan (TC) debriefed on the Council of Ministers Responsible for Transportation and Highway Safety meeting. Ministers have notionally agreed on the Framework for ZEV.

➔ Action Item: Implicated departments will continue collaborating going forward.

5. Clean Energy for Rural and Remote Communities

- Christyne Tremblay and Niall O'Dea (NRCan) provided an overview of the Reducing Reliance on Diesel portal, including the Atlas of Canada (Remote Communities Energy Database), the single-window portal, and the client-focused programming.
- The approach focuses on sharing pertinent regional knowledge and data, to facilitate access to federal funding.
- There is ongoing work to further refine content, addressing information gaps, and accuracy.
- Key issues raised in discussions included:
 - Importance of managing expectations regarding available funding
 - Need for PT-specific aggregated strategies, while also recognizing individual community circumstances
 - Synergies between reducing reliance on diesel, building resilience, and ongoing work under the Arctic Policy Framework
 - Potential link to G7 discussions on resilient coastal communities and small island states
 - Concern on the level of intensive, specialized skills required to manage projects

➔ Action Item: Partner departments will continue to work together, and come back to DMOC to present at a later date.

Roundtable items on Inuit, Métis, and First Nation tables and Low Carbon Economy Fund were deferred due to time constraints.

NOTE:

- Future meetings will block 2 hours in participant calendars.
- The Next DM meeting will take place on **February 28, 2018**.

List of Meeting Participants

PCO (cochair)	Alison O'Leary, Assistant Secretary to the Cabinet, IGA	
ECCC (cochair)	Stephen Lucas, Deputy Minister	
AAFC	Nada Semaan, Associate DM	
CIRNA	Mark Hopkins, DG, Natural Resources and Environment Branch	
DISC	Sony Perron, ADM, DISC Executive's Office	
ECCC	Matt Jones, ADM, PCFIO Vincent Ngan, DG, PCFIO Tanuja Kulkarni, Manager, PCFIO Maria Clavijo, Policy Advisor, PCFIO	
ECCC – Special Guests	George Enei, ADM, Science and Technology Branch John Moffet, A/ Associate ADM, Environmental Protection Branch Doris Fortin, A/Director, Science and Technology Branch Fred Beauregard-Tellier, Executive Director, Indigenous & External Relations, PCFIO Jeff Lindberg, Manager, LCEF Secretariat, PCFIO	
FIN	Richard Botham, ADM, Economic Development and Corporate Finance	
INFC	Yazmine Laroche, Associate DM Robert Judge, Director, Sectoral Policy	
NRCAN	Christyne Tremblay, DM Niall O'Dea, DG, Electricity Resources Branch	
PCO	Glenn Hargrove, Director of Operations, Economic and Regional Development Policy Matt Lynch, Director of Operations, IGA Jay Barber, Senior Policy Officer, IGA	
TC	Michael Keenan, DM Ellen Burack, DG, Environmental Policy	
TBS	Jane Pearse, Assistant Secretary for Economic Sector	
Special Guests	Mona Nemer, Canada's Chief Science Advisor	
CFI		
CIHR	Michelle Peel, a/Director General	
NSERC	Mario Pinto, President	
SSHRC	Ted Hewitt, President	